08-1993 R – Little Quilcene River Delta Cone Removal

PROJECT PROPOSAL – RESTORATION AND ACQUISITION PROJECTS (Excluding Fish Passage)

INSTRUCTIONS: Salmon Recovery Funding Board applicants must respond to the following items. Please respond to each question individually. Local citizen and technical advisory groups will use this information to evaluate your project. Contact your lead entity for additional information that may be required. Limit your response to eight pages.

Submit information via the PRISM attachment process. Application checklists and attachment forms may be downloaded off the SRFB Web site at http://www.rco.wa.gov/srfb/docs.htm.

NOTE: Acquisition, Combination, and Diversions and Screening projects have supplemental questions embedded within this worksheet. Please answer the questions below and all pertinent supplemental questions.

PROJECT OVERVIEW

Explain your project overall and include the following elements:

a) List your primary project objectives, such as how this project will improve or maintain habitat conditions and habitat forming processes.

All species depend upon healthy and productive nearshore and estuarine habitats. Therefore the **overarching objective of the project is to restore the historic natural estuarine function** of the Little Quilcene River. The project will continue the restoration of the Little Quilcene River by removing the aggraded delta cone thus adding additional flood plain, estuarine habitat, and a greatly improved lower river channel.

The additional volume added to the Quilcene Bay will be 22,000 cubic yards or 594,000 cubic feet. The estimated rate of deposition for the Little Quilcene River is 700 to 900 cubic yards a year. The delta cone excavation, combined with the removal of the north levee of the river will set back the estuary accretion clock by 25 to 31 years or longer.

The increased flooding of Quilcene Bay will add approximately 330 cfs (over a 30 min. tidal period) to the tidal flushing outflow from the bay. This additional flow energy will help move sediments from the shallow areas of the bay into deeper waters. The restoration effects on the bay will be significant.

b) State the nature, source, and extent of the problem that the project will address, including the primary causes of the problem, not just the symptoms. Explain how achieving the project objectives will help solve the problem. (Diversions and Screening projects should refer to the supplemental questions later in this worksheet for further guidance on information to include in their problem statement.)

In the nearshore area, farmers have diked and filled salt marshes and estuaries, interrupting nearshore processes and eliminating salt marsh habitats. In the nearshore and estuarine environment, high salt marsh, eelgrass, and shallow habitats are critical to all species as they make the transition to the marine environment. Changes to the nearshore environment are important to chum, steelhead and chinook, the three federally listed species in the Little Quilcene River.

In the Little Quilcene watershed, human activities, especially related to land use, have

degraded salmon habitat. In particular, forest practices, agriculture, rural development and shoreline development have had negative effects. These changes have resulted in higher water temperatures, lack of large woody debris, reduced woody debris recruitment, smothering of spawning gravels, and developed a large aggraded delta cone, all of which are detrimental to salmonids. This project will eliminate the aggraded delta cone and remove a levy thus returning the estuary to a historically well functioning system.

c) Describe the fish resources (species and life history stages present, unique populations), the habitat conditions, and other current and historic factors important to understanding this project. Be specific--avoid general statements.

The Little Quilcene River estuary represents some of the most significant estuarine / salt marsh areas in this marine complex and has been impacted by the construction of a dike system nearly 100 years ago. The estuary supports sustaining populations of chinook, pink, chum, steelhead, coho, sturgeon, and cutthroat, yet dikes have disturbed tidal function on a significant portion of this estuary (LFA, 2003). The diking limits the amount of mesohaline habitat available to salmon fry, and this disturbance of the natural flow regime reduces juvenile chum access to the marshes and inhibits prey production (Ames et al. 2000).

d) Discuss how this project fits within your regional recovery plan or local lead entity strategy (i.e., does the project address a priority action, occur in a priority area, or target priority fish species?).

The project complies with the tenants of the "*Hood Canal and Eastern Strait of Juan de Fuca Summer Chum Salmon Recovery Plan"* and is a high priority project listed in the "*Three-Year Watershed Implementation Priorities for Hood Canal Coordinating Council*" as a Domain 1 project[1].

2) PROJECT DESIGN

a) Describe the location of the project in the watershed (nearshore, estuary, main stem, tributary, off channel, etc.).

The project is sited at the mouth of the Little Quilcene River as it enters the northern most end of Quilcene Bay in Jefferson County, WA.

b) Describe the project design and how it will be implemented. Describe the extent of the project. Describe specific restoration methods and design elements you plan to employ. If restoration will occur in phases, explain individual sequencing steps, and which of these steps is included in this application. (Acquisition-only projects need not respond to this question.)

The project will be completed in several phases although the phases with be consecutive and occur over one construction season. The scope of the project includes:

Continuation of the restoration of the Little Quilcene River by adding additional flood plain, estuarine habitat, and a greatly improved lower river channel. The additional volume added to the Quilcene Bay will be 22,000 cubic yards or 594,000 cubic feet. The

[1] Domain 1 represents natal freshwater and sub-estuarine habitats for 7 extant summer chum subpopulations, 2 extant chinook populations, and 1 extant bull trout subpopulation in the HCCC LE area.

estimated rate of deposition for the Little Quilcene River is 700 to 900 cubic yards a year. The excavation, combined with the removal of the north levee of the river will set back the estuary accretion clock by 25 to 31 years or longer – depending on how much the added flood plain absorbs the river gravels. The increased flooding of Quilcene Bay will add approximately 330 cfs (over a 30 min. tidal period) to the tidal flushing outflow from the bay. This additional flow energy will help move sediments from the shallow areas of the bay into deeper waters.

The estuarine habitat gain from the project is significant:

- There will be a 2 acre gain in salt water estuary via removal of the upland habitat.
- There will be a 4 acre gain in estuarine habitat below mean high water.
- The estuarine habitat below MHW and above the mud flats has the highest productivity for salmon fry.
- This additional "highly productive" estuarine habitat is critical to producing increased salmon population in the area.
- The overall restoration effects on the bay will be significant.

c) Describe the scale and size of the project, and its proximity to protected, functioning, or restored habitats.

This project will remove the aggraded delta cone covering more than eleven (1) acres, and the remaining 1,120 foot sea levy and reestablish the historical estuarine profile and 962 feet of new river channel 32 feet wide.

To date over $3 million has been invested in the Quilcene Bay. Approximately $5 million will be invested this year with the overall strategic plan estimating a $12 million upon completion of all identified projects in the coming years.

d) Describe the salmonid species and life cycle stage(s) that are targeted to benefit by this project.

The estuary supports sustaining populations of chinook, pink, chum, steelhead, coho, sturgeon, and cutthroat, and is particularly important to juvenile salmonids.

e) Describe the long-term stewardship and maintenance obligations for the project or acquired land. For acquisition and combination projects, identify any planned use of the property, including upland areas.

Once the project is complete long-term maintenance obligations for the project are nonexistent with the exception of monitoring as the estuary, once restored, relies on natural processes to function effectively.

3) PROJECT DEVELOPMENT

a) List the individuals and methods used to identify the project and its location.

The location, priority, and timing of the project are developed by the Lead Entity (HCCC) as a part of the *Three-Year Watershed Implementation Priorities for Hood Canal Coordinating Council*" after consultation with all the interested parties both public and private in the Puget Sound region.

Specific expertise utilized to initiate, plan, execute / control this project include:

- Lead Engineer – Pat McCullough, ESA Inc. Over 60 environmental projects completed in Hood Canal Watershed;
- Randy Johnson – WDFW;
- Bob Barnard – WDFW;
- Rich Carlson – USFWS;
- Margie Shirato – WDFW;
- Richard Brocksmith – HCCC.
- Neil Werner - HCSEG

b) Explain how the project's cost estimates were determined.

With over 60 similar environmental projects completed in the Hood Canal Watershed, Mr. Pat McCullough, ESA, Inc. developed the budget based on his survey and "*Existing Delta Cone Estuary Elevations*" drawings provided in the proposal. Cost estimates were spot checked with local construction subcontractors for reasonableness.

c) Describe other approaches, opportunities, and design alternatives that were considered to achieve the project's objectives.

No other viable and cost effective alternatives to delta cone removal are known or were considered.

d) Describe the consequences of not conducting this project at this time. Consider the current level and imminence of risk to habitat in your discussion.

Without this project at this time the delta cone will continue to grow at a rate of between 700 and 900 cyd per year further degrading an already degraded river estuary. Critical habitat will continue to be lost and the opportunity to restore the estuarine complex next year will be forever lost thereby denying another generation of ESA listed salmonids the opportunities afforded by a pristine, fully functioning river estuary and nearshore habitat.

e) Describe any concerns about the project raised from the community, recreational user groups, or adjacent land owners, and how you addressed them.

The Lead Entity and the HCSEG has maintained an intensive outreach and education program in the Quilcene Bay area for more than five (5) years resulting in overwhelming support for restoration efforts completed and planned for the Quilcene Bay and watershed.

This project is but one part of an overarching, multiyear program of ecosystem acquisition, restoration, preservation and habitat improvement and monitoring on the Quilcene Bay. During the course of the year members of the HCSEG conduct workshops, environmental exploration, and education and multimedia presentations for community members all along the Quilcene Bay.

This project will continue to inform and educate the public. We hypothesize that our high-tech, high-touch approach builds community involvement and support for ecosystem protection and restoration as evidenced by our history of fund raising and community activism.

f) Include a Partner Contribution Form, when required, from each partner outlining its role and contribution to the project. This form may be downloaded off the SRFB Web

site. State agencies are required to have a local partner that is independently eligible to be a project sponsor. A Partner Contribution Form is also required from partners providing third-party match.

Forms Attached in PRISM

g) List all landowner names. Include a signed Landowner Acknowledgement Form (available on the SRFB Web site) from each landowner acknowledging their property is proposed for SRFB funding consideration. If a restoration project covers a large area and encompasses numerous properties, Landowner Acknowledgement Forms are not required. For sponsors proposing work on their own property, this form is not required. For multi-site acquisition projects involving a relatively large group of landowners, include, at a minimum, signed Landowner Acknowledgement Forms for all known priority parcels.

Two (2) landowners are associated with the project:

1. Hood Canal Salmon Enhancement Group – 80 acres purchased from Mr. Dave Ward with RCO funding.
2. Mr. Herb Beck

Landowner Acknowledgement Forms Attached in PRISM

h) List the names, qualifications, roles, and responsibilities for all known staff, consultants, and subcontractors who will be implementing the project. If unknown, describe the selection process.

1) **Neil W. Werner** – **Project Manager**; Executive Director Hood Canal Salmon Enhancement Group.

2) **Kim Gower - Office Manager** responsible for general administrative business operations.

3) **Mona Pillers – Office Accountant** and Administrative Assistant responsible for the day to day functions of financial accounting; researches information for projects, grants and legislative policies.

4) **Pat McCullough**, ESA Inc - **Lead Engineer**. Over 60 environmental projects completed in Hood Canal Watershed

5) **Construction Contractor(s)** – The contractor will be selected following the best and final proposal submitted from a list of qualified (responsive & responsible) contractors maintained and updated annually by the HCSEG in accordance with standard policy and procedures.

Others may be selected with experience in near shore and estuary issues and familiar with Hood Canal Watershed prior to contract award(s). No additional expertise is anticipated for this proposed project.

6) TASKS AND SCHEDULE

List and describe the major tasks and time schedule you will use to complete the project. Describe your experience managing this type of project.

The Hood Canal Salmon Enhancement Group has completed numerous other estuary restoration projects in the recent past. All completed on time and on budget. We have developed the experience through lessons learned coupled with long-term relationships with our list of prime and sub contractors to ensure a maximum reduction of risk associated with schedule, cost or quality of this project.

Major Tasks: (Pending Funding Award Schedule)

1) Land Owner Agreements – Obtained
2) Preliminary Engineering - Obtained
3) Permits - Obtained
4) Final Engineering Design – Funding + two weeks
5) Mobilization – Final Design + one week
6) Augment access road along the Sea Dike or old river bed – Mobilization + two days
7) Removal of delta cone down to elevation 6.5 (Tidal Elevation 9.26 MLLW) – Access road + two weeks
8) Construction of the new river channel out to elevation 5.5 – Delta Cone removal + 3 days
9) Removal of the Sea Dike – River Channel completion + five days
10) Final grading and planting – Sea Dike removal + 3 days
11) Demobilization – Final grading and planting + 1 day
12) Monitoring – on going

1) CONSTRAINTS AND UNCERTAINTIES

Each project should include an adaptive management approach that provides for contingency planning. State any constraints, uncertainties, possible problems, delays, or unanticipated expenses that may hinder completion of the project. Explain how you will address these issues as they arise and their likely impact on the project.

The delta cone removal outlined in this grant application has been designed based on the removal of 90% or more of the Little Quilcene River Delta Cone. The preliminary design is based on the assumption that various funding sources (NRCS, WRP and others) will be available to achieve that objective. If funding for the entire project is not available then the removal of the upland portion of the delta cone to below high salt marsh elevation will receive - first priority, the construction of the new river channel out to elevation 7.0 - second priority, the removal of the delta cone down to elevation 7.5 - third priority and then removal of delta cone down to elevation 6.5 (Tidal Elevation 9.26 MLLW). The decision of how much of the delta cone can, or will, be removed will depend on the funding available but there will only be one delta cone removal project. We expect to construct the project during the summer of 2009; however it may take until the summer of 2010 to acquire all the funding necessary to achieve our objectives for this project.

No other major constraints, uncertainties or delays are anticipated. The only unanticipated expense category of concern is that of fuel costs. That concern is mitigated by the HCSEG willingness to absorb the fuel cost differential over that planned and budgeted. Of course other issues may arise that, if left unmanaged, may hinder or delay the completion of the project on time, budget or meeting quality norms. The only sensible strategy is to closely manage the project and deal with or escalate problems or delays as they arise and before they have a chance to spiral out of control. Our team's ability to adaptively manage contingencies is proven and governed by our "readiness strategy".

Readiness-Building Strategy - Readiness for ecosystems restoration begins with the creation of a team dedicated to developing a coherent vision of a successful initiative. Our team is a cross-functional team, made up of scientific, technical, administrative, program / project management, education, and information systems personnel. Their mission is to develop a focused, aligned vision of how ecosystem restoration will meet specific needs articulated in the Governor's Puget Sound Partnership and the HCCC Recovery Strategy. Moreover the strategy is tailored to fit into the unique Hood Canal / Quilcene Bay environment. This team, along with the Lead Entity helps ensure buy-in and commitment from multiple stakeholder groups as buy-in is considered vital to a successful restoration project.

Our team is formed. We have completed the project assessment and prioritization (initiation) phase, and the planning phase. We have worked together over the years and we are ready to quickly and effectively complete the execution / control and close-out phases of this project.

Supplemental Questions

2) ***PROJECTS INVOLVING ACQUISITIONS (Applies to both Acquisition-only and Combination Projects)– Answer the following questions – Not Required***
3) ***DIVERSIONS AND SCREENING PROJECTS -- Answer the following questions: Not Required***